

# Work Order ID 85872

June-18-12 7:37:01 AM

**\*85872\***

Page 1

Item ID: D212-664-201TRN

Accept

**\*N900040100\***

Setup Start **\*NS1\***

Revision ID:

Stop **\*NS2\***

Item Name: Crosstube Turning Detail

Start Date: 18/06/2012 Start Qty: 1.00

**\*1\***

Cust Item ID:

Required Date: 02/07/2012 Req'd Qty: 1.00

**\*1\***

Customer:

Reference:

Approvals: Process Plan: MLJ

Date: 12/06/18 Tooling:

Date:

Run Start **\*NR1\***

QC:

Date: SPC (Y/N):

Date:

Stop **\*NR2\***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

Draw Nbr

Revision Nbr

D212-664-241

Rev D

100

0.00

**\*100\***

MORI SEIKI CNC LATHE LARGE

Mori Seiki

Memo

0.00

Mori Seiki CNC Lathe Large

1-Fill tube with sand & install plugs DT8534 on both ends as per Folio FA114

2-Turn first side as per Folio FA114

3-Blend transition lines only, \*\*do not sand whole tube\*\*.

FOLIO REV: AD

DWG REV: D

\*Use mill bastard file, brush file repeatedly with file card.

\*Do not use sandpaper coarser than 320 grit.

1 Ø KC 12-6-20

110

QC1- Inspect dimensions to dimension sheet

0.00

**\*110\***

QC

Memo

0.00

Quality Control.

1 Ø KC 12-6-20

**Work Order ID 85872**

June-18-12 7:37:01 AM

**\*85872\***

Page 2

Item ID: D212-664-201TRN

Accept

**\*N900040100\***Setup Start **\*NS1\***

Revision ID:

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Item Name: Crosstube Turning Detail

Start Date: 18/06/2012 Start Qty: 1.00

**\*1\***

Cust Item ID:

Required Date: 02/07/2012 Req'd Qty: 1.00

**\*1\***

Customer:

Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_  
QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Run Start **\*NR1\***Stop **\*NR2\***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
120	MORI SEIKI CNC LATHE LARGE	0.00							
<b>*120*</b>									
Mori Seiki	Memo	0.00				1	Ø	KC	12-6-20
Mori Seiki CNC Lathe Large	1-Turn second side as per Folio FA114								
	2-Blend transition lines only, **do not sand whole tube**: *Use mill bastard file, brush file repeatedly with file card. *Do not use sandpaper coarser than 320 grit. FOLIO REV: <u>AD</u> DWG REV: <u>AD</u> 3-Remove sand and plugs								
	4- scribe batch # and part # as per dwg								
130	QC1- Inspect dimensions to dimension sheet	0.00							
<b>*130*</b>									
QC	Memo	0.00				1	Ø	KC	12-6-20
Quality Control									

1  $\phi$  KC 12-6-201  $\phi$  KC 12-6-20

NCR: Yes / No

## WORK ORDER NON-CONFORMANCE / UPDATE

See Rinko 12-154  
 DQA: dat Date: 12/06/28  
 QA Closed: CK Date: 12/6/29

Work Order: <u>85872</u> Part No. <u>D212-662-201 TRN</u> NCR No. <u>12-1543</u>	<b>DISPOSITION</b> Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input checked="" type="checkbox"/> Work Order Update <input type="checkbox"/>	<b>AGAINST DEPARTMENT/PROCESS</b> Skid-tube <input type="checkbox"/> Machining <input type="checkbox"/> Thermoforming <input type="checkbox"/> Large Fab <input type="checkbox"/> Crosstube <input checked="" type="checkbox"/> Small Fab <input type="checkbox"/> Finishing <input type="checkbox"/> Composite <input type="checkbox"/> Prod. Eng. Coord. <input type="checkbox"/> Rec/Store/Packaging <input type="checkbox"/> Supplier <input type="checkbox"/> Other <input type="checkbox"/> Engineering Quality <input type="checkbox"/>
--	--	---

Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Doc/Data	12/06/22	130	1	PART WAS INSPECTED PER QSI-038 BUT WAS UNABLE TO RECORD DIMENSION REQUIRED ON INSPECTION SHEET FOR READING 4 ON FAI INSPECTION SHEET. POSSIBLE DIMENSIONS ARE PART OF RECEIVING REPORT	UP 12/6/27 QSI/42	Acceptable. READING 4 IS ON RAW MATIL & RAW MATIL IS GOOD	UP 12/6/27	12-6-27	S 12/06/27
Equip/Tooling									
Operator									
Material									
Offset/Setup									
Other									
Process									
Supplier									
Training	<input checked="" type="checkbox"/>								
Unauthorized									

## FAULT CATEGORY

Landing Gear	Hardware	General
<input type="checkbox"/> Bending Passes Below Min	<input type="checkbox"/> Breaking	<input type="checkbox"/> Burrs
<input type="checkbox"/> Centre Not Concentric to O/S	<input type="checkbox"/> Missing	<input type="checkbox"/> Contamination
<input type="checkbox"/> Cracks	<input type="checkbox"/> Size/Length	<input type="checkbox"/> Cut Too Short
<input type="checkbox"/> Crushed/Crimp at Bending	<input type="checkbox"/> Spinning	<input type="checkbox"/> Documentation/Data
<input type="checkbox"/> Inspection Strip in Tube	<input type="checkbox"/> Threading	<input type="checkbox"/> Finish
<input type="checkbox"/> Other	<input type="checkbox"/> Wrong	<input type="checkbox"/> Inspection Incomplete
<input type="checkbox"/> Positioned Wrong	<b>Drill Holes</b>	<input type="checkbox"/> Inspection Unqualified
<input type="checkbox"/> Ripples on Inner Bend	<input type="checkbox"/> Misaligned	<input type="checkbox"/> Instructions Incomplete/Unclear
<input type="checkbox"/> Torque Waves in Extrusion	<input type="checkbox"/> Ovalized	<input type="checkbox"/> Jigs/Fixtures/Tooling
<input type="checkbox"/> Turning Sequence	<input type="checkbox"/> Over/Undersized	<input type="checkbox"/> Kit Incorrect
<input type="checkbox"/> Wave/Twist in Tube	<input type="checkbox"/> Too Many	<input type="checkbox"/> Kit Missing
		<input type="checkbox"/> Maintenance
		<input type="checkbox"/> Mislabeled
		<input type="checkbox"/> Off-Set
		<input type="checkbox"/> Orientation Misread
		<input type="checkbox"/> Out of Calibration
		<input type="checkbox"/> Out of Sequence
		<input type="checkbox"/> Outside Dimensions
		<input type="checkbox"/> Over/Under tolerance
		<input type="checkbox"/> Part Lost
		<input type="checkbox"/> Part Moved
		<input type="checkbox"/> Raw Material
		<input type="checkbox"/> Set-up
		<input type="checkbox"/> Supplier
		<input type="checkbox"/> Temperature/Cure
		<input type="checkbox"/> Weld
		<input type="checkbox"/> Wrong Stock Pulled
		<input type="checkbox"/> Other

# Work Order ID 85872

**\*85872\***

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June-18-12 7:37:01 AM

Item ID: D212-664-201TRN

Accept

**\*N900040100\***

Setup Start **\*NS1\***

Revision ID:

Stop **\*NS2\***

Item Name: Crosstube Turning Detail

Start Date: 18/06/2012 Start Qty: 1.00

**\*1\***

Cust Item ID:

Required Date: 02/07/2012 Req'd Qty: 1.00

**\*1\***

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start **\*NR1\***

QC:

Date:

SPC (Y/N):

Date:

Stop **\*NR2\***

Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Tool ID

Tool #

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

140

QC8- Inspect parts - second check

0.00

**\*140\***

QC

Memo

0.00

Quality Control

*DP*

*12-6-20*

145

0.00

**\*145\***

Crosstubes

Memo

0.00

Crosstubes

GRIND ONLY TRANSITION LINES SMOOTH LONGITUDE WAY.

*TW*

*12-6-25*

150

Crosstubes Chemical Conversion

0.00

**\*150\***

HandFXtube

Memo

0.00

Hand Finishing Crosstubes

*Hand*

*5/26/12 acid etch inside of tube only*

*7/10*

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June-18-12 7:37:01 AM

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Setup Start **\*NS1\***

Revision ID:

Stop **\*NS2\***

Item Name: Crosstube Turning Detail

Start Date: 18/06/2012 Start Qty: 1.00 **\*1\***

Cust Item ID:

Required Date: 02/07/2012 Req'd Qty: 1.00 **\*1\***

Customer:

Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Run Start **\*NR1\***

QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Stop **\*NR2\***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
160 <b>*160*</b> QC Quality Control	QC7-Inspect Chemical Conversion Coat  Memo <i>u/A</i>	0.00  0.00 <i>g</i>							
170 <b>*170*</b> Packaging Packaging	Packaging  Memo Identify and stock in kanban rack Location: <u>LG</u>	0.00  0.00							
180 <b>*180*</b> QC Quality Control	QC21- Final Inspection - Work Order Release  Memo	0.00  0.00							

*MO 12-6-26*

*12/6/27*

*R12-06-26*

# Picklist Print

June-18-12 7:37:07 AM

Page 1

Work Order ID: 85872

\*85872\*

Parent Item: D212-664-201TRN

\*D212-664-201TRN\*

Parent Item Name: Crosstube Turning Detail

Start Date: 18/06/2012

Required Date: 02/07/2012

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP Rev:A 08-03-06 new issue DD verified by:ec  
IPP Rev B 08.04.02 Removed polish EC verified DD

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D6006-129		Manufactured	No			120	Each	27.0000	1	1			
*D6006-129*									**				
Crosstube Material													

Location

Loc Qty

Loc Code

LG

27

23970

2

26550

3

34690

1

69838

21

LC 12-6-20

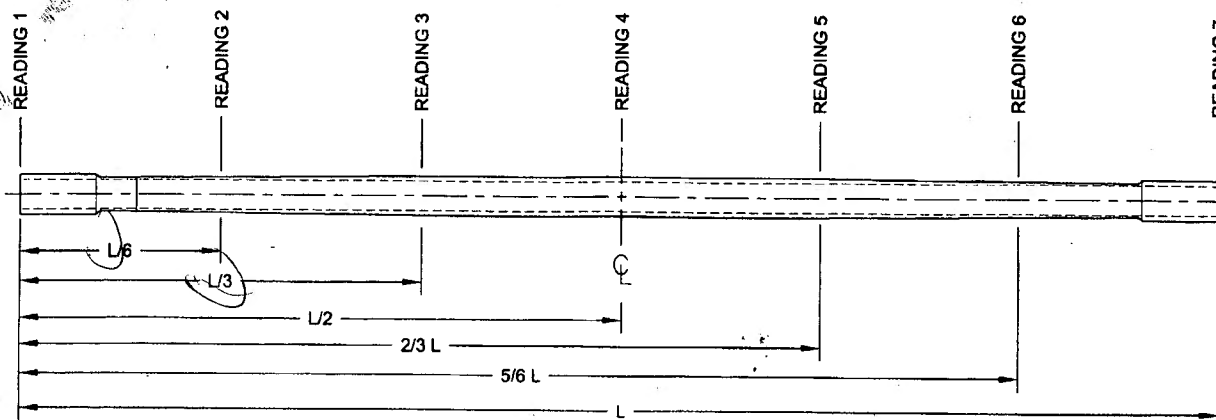
<b>DART AEROSPACE LTD</b>	<b>Work Order:</b>	85872
<b>Description:</b> Crosstube Assembly (205/212 High Aft)	<b>Part Number:</b>	D212-664-241
<b>Inspection Dwg:</b> D212-664-241 <b>Rev:</b> D		Page 1 of 2

### FIRST ARTICLE INSPECTION CHECKLIST

	Inspection Sheet Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
SIDE A	0.200	+/-0.010	.200	✓		VERN	CNC-08
	R0.063	+/-0.010	.063	✓		RG	—
	2.990	+0.005/-0.000	2.994	✓		VERN	CNC-08
	5.237	+/-0.030	5.237	✓			
	2.600	+0.005/-0.000	2.604	✓			
	2.686	+0.005/-0.000	2.688	✓			
	2.770	+0.005/-0.000	2.773	✓			
	2.854	+0.005/-0.000	2.858	✓			
	2.938	+0.005/-0.000	2.942	✓			
	3.021	+0.005/-0.000	3.023	✓			
	3.133	+0.005/-0.000	3.136	✓			
	3.179	+0.005/-0.000	3.182	✓			
SIDE B	0.200	+/-0.010	.200	✓		VERN	CNC-08
	R0.063	+/-0.010	.063	✓		RG	—
	2.990	+0.005/-0.000	2.993	✓		VERN	CNC-08
	5.237	+/-0.030	5.237	✓			
	2.600	+0.005/-0.000	2.604	✓			
	2.686	+0.005/-0.000	2.688	✓			
	2.770	+0.005/-0.000	2.775	✓			
	2.854	+0.005/-0.000	2.859	✓			
	2.938	+0.005/-0.000	2.947	✓			
	3.021	+0.005/-0.000	3.025	✓			
	3.133	+0.005/-0.000	3.136	✓			
	3.179	+0.005/-0.000	3.183	✓			
	124.352	+/-0.020	124.360	✓		+ Tape	LG-25

<b>DART AEROSPACE LTD.</b>	<b>Work Order:</b> 85872
<b>Description:</b> Crosstube Assembly (205/212 High Aft)	<b>Part Number:</b> D212-664-241
<b>Inspection Dwg:</b> D212-664-241 Rev: D	<b>Page 2 of 2</b>

### WALL THICKNESS MEASUREMENT



Location	WALL THICKNESS MEASUREMENT (IN)				Deviation $\Delta w$ (max-min)	TOLERANCE
	w1	w2	w3	w4		
READING 1 L = 0"	.388	.366	.402	.386	.036	0.062"
READING 2 L = 20"	<del>.301</del> <del>.308</del>	.282	.308	.325	.043	
READING 3 L = 40"	<del>.454</del> <del>.482</del>	.459	.454	.468	.028	
READING 4 L =	Can't measure, O/L of 12/6/17					
READING 5 L = 40"	.322	.300	.285	.313	.037	
READING 6 L = 20"	.483	.455	.452	.479	.031	
READING 7 L =	.398	.399	.387	.373	.026	

#### Calibration Result

Actual Block Thickness: 100-500

SITESCAN 250 Measured Thickness: 100-500

<b>Measured by:</b> RC
<b>Date:</b> 12-6-19

<b>Audited by:</b> DP
<b>Date:</b> 12-6-20

<b>Preliminary Approval:</b>
<b>Date:</b>

Rev	Date	Change	Revised by	Approved
A	05.04.27	New Issue (P/O D412-664-201)	KJ/JLM	
B	06.03.09	Tolerance for 5.237 was +/-0.001	KJ/JLM	
C	07.05.08	Dwg Rev. updated	KJ/JLM	
D	10.08.03	Dimension 124.362 was 124.36	KJ	
E	12.06.04	Wall thickness form added	KJ	



Item	Qty -241	Qty -241B	Part Number	Description
1	X		D212-664-241	CROSSTUBE ASSEMBLY (205/212 HIGH AFT)
2		X	D212-664-241B	CROSSTUBE ASSEMBLY (214 HIGH AFT)
3	1	1	D6006-129	CROSSTUBE
4	2	2	D2940-1	SUPPORT
5	4	4	D3595-063-530	RUBBER CUSHION
6	4	4	MS21920-28	CLAMP (OR MS21920-30)
7	A/R	A/R	MAGNOBOND 6398	ROCKWELL SPECIFICATION RBO-120-023 ADHESIVE (TEXTRON/BELL SPEC. 299-947-100, TYPE II, CLASS 2 ADHESIVE)

# GENERAL NOTES:

- 1) MATERIAL: MANUFACTURED FROM D6006-129  
FINISHED LENGTH = 124.362±0.020
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1  
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2  
PAINT OUTSIDE PER DART QSI 005 4.2
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED.
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX.
- 6) IDENTIFICATION: SCRIBE DART PART NUMBER "D212-664-XXX" AND BATCH NUMBER ON INSIDE OF CUFF  
USING VIBRATING STYLUS.
- 7) WEIGHT: D212-664-241 = 44.2 lbs (PER IIN-D212-664)  
D212-664-241B = 44.2 lbs (PER IIN-D212-664)
- 8) PART IS SYMMETRIC ABOUT CENTERLINE.
- 9) RUN CUTTER OFF PART. BLEND OUT EDGE LONGITUDINALLY, TRANSITION SHOULD BE SMOOTH.
- 10) BEND PROGRESSIVELY WITH A MINIMUM OF 5 PASSES. MAXIMUM TUBE FLATTENING DUE TO BENDING  
IS 6% BASED ON O.D.
- 11) LIQUID PENETRANT INSPECT OUTSIDE SURFACE OF CROSSTUBE PER QSI 038.
- 12) INSTALL D2940-1 SUPPORT USING 0.03" TO 0.06" THICK LAYER OF MAGNOBOND 6398 TO THE SURFACE  
OF D2940-1 THAT WILL BE IN CONTACT WITH THE CROSSTUBE PER QSI 015. LET CURE FOR 12 HOURS  
AFTER INSTALLATION AND PRIOR TO PACKAGING.
- 13) INSTALL MS21920-28 CLAMPS (OR -30) WITH D3595-063-530 RUBBER CUSHIONS TO SECURE THE D2940-1  
SUPPORT ON TOP SIDE OF THE CROSSTUBE. ENSURE CLAMPS ARE OPPOSITE OF CROSSTUBE  
SUPPORT.
- 14) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE  
SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR  
DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND  
MARKS ARE UNACCEPTABLE.
- 15) TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS SHOWING IN SAFETY AND THAT NUT  
HAS NOT BOTTOMED-OUT AFTER TORQUING.

SHOP COPY  
RETURN TO  
ENGINEERING  
UNCONTROLLED COPY  
SUBJECT TO AMENDMENT  
WITHOUT NOTICE  
WORK ORDER  
NO. 85872 MLJ

12/06/18

600 #11-614  
11.08.28  
UNDER REVIEW  
11/06/13

DEO ATTACHED

RELEASED  
2009 -10-29  
my

D	REFORMAT/REVISE GENERAL NOTES/PART LIST; REORGANIZED VIEWS AND REFORMATTED DRAWING TO CURRENT STANDARDS; ADD -241B (ZN D4-2, B4-2); REMOVED REF & ADD TOLERANCES (ZN D8-3 & C4-3, C6-3 & A8-3); RELOCATED FLAG #6 PER PAR 08-046 (ZN A5-3); MOVED TURNING DETAIL & UPDATED TOLERANCE TO SHEET 4	RF	09.09.30
C	REMOVE -1009 ABRASION STRIP; ADD MAGNOBOND 6398, CUSHION, REVERSE CLAMPS	PH	07.03.08
B	ADD HOLES FOR COMPATABILITY WITH BHT/AA SKIDTUBES	PH	05.02.04
A	NEW ISSUE	PH	00.12.12
REV.	DESCRIPTION	BY	DATE
DESIGN	<u>PH</u>	<b>DART AEROSPACE LTD</b> HAWKESBURY, ONTARIO, CANADA  DRAWING NO. REV. D D212-664-241 SHEET 1 OF 4 TITLE SCALE CROSSTUBE ASSY (205/212 HI AFT) NTS	
DRAWN	<u>RF</u>		
CHECKED	<u>PH</u>		
MFG. APPR.	<u>PH</u>		
APPROVED	<u>PH</u>		
DE APPR.	<u>PH</u>		
DATE	09.09.30	<small>COPYRIGHT © 2000 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL, AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.</small>	

12 13 15  
D2940-1 SUPPORT  
MS21920-28 CLAMP, 2X  
D3595-063-530 RUBBER CUSHION, 2X  
2 PL

A5-2

14.00 (-241)  
OR 13.75 (-241B)

D212-664-601  
BENT TUBE

CL  
SYM

**D212-664-241/-241B**  
**ASSEMBLY DETAIL**

UNDER REVIEW

DEO ATTACHED

**RELEASED**  
2009-10-29

12  
APPLY MAGNOBOND  
BETWEEN D2940-1 AND  
CROSSTUBE

D2940-1 SUPPORT, REF

13 15  
MS21920-28  
CLAMP, REF

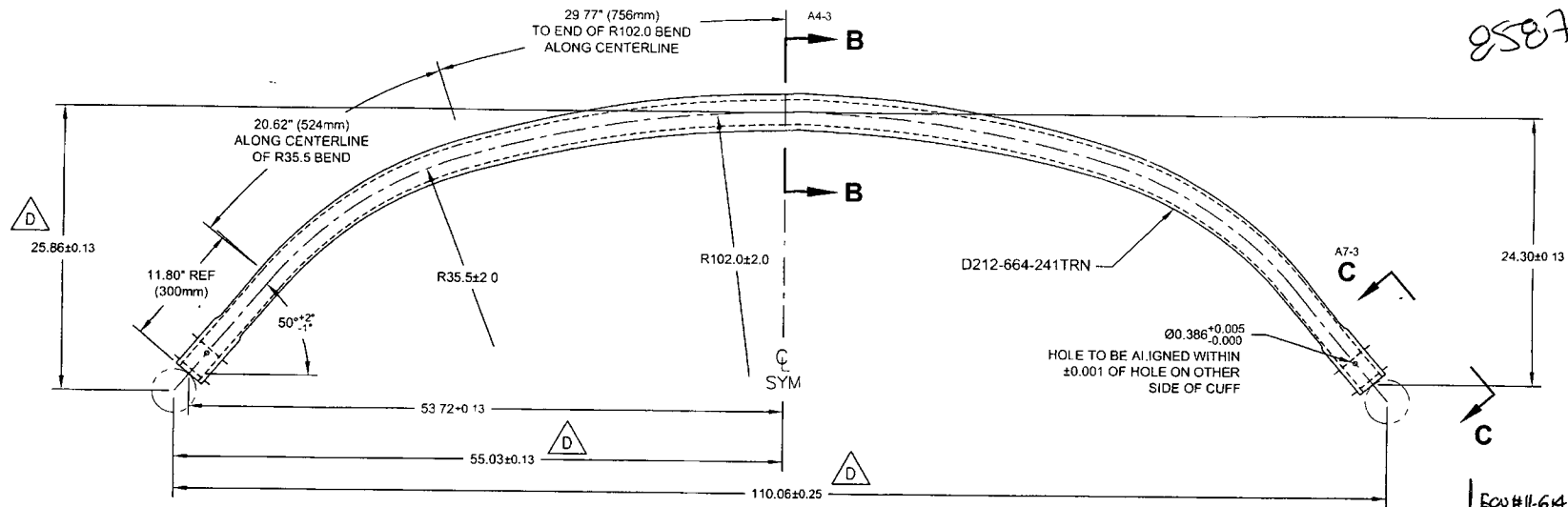
D3595-063-530 RUBBER CUSHION  
UNDER CLAMP, REF

**SECTION A-A** D8-2  
SCALE 4X

DESIGN	PH	<b>DART AEROSPACE LTD</b>	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	Q	DRAWING NO.	REV. D
MFG. APPR.	DS	D212-664-241	SHEET 2 OF 4
APPROVED	AP	TITLE	SCALE
DE APPR.	HL	CROSSTUBE ASSY (205/212 HI AFT)	NTS
DATE	09.09.30	<small>COPYRIGHT © 2000 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.</small>	

8 7 6 5 4 3 2 1

05072



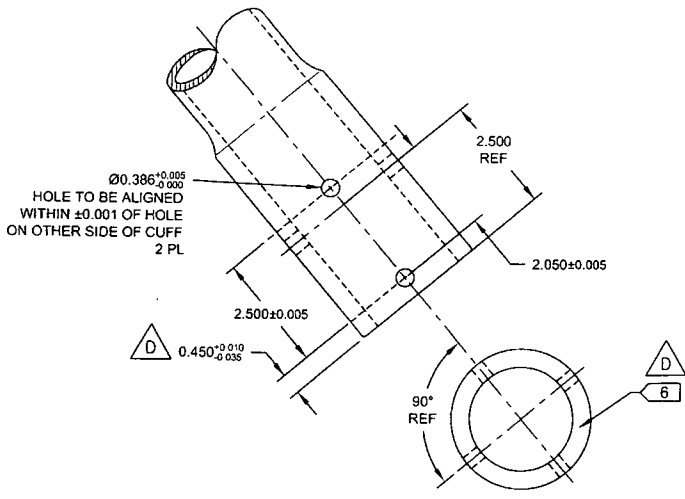
**D212-664-601** 10 D  
**BENDING AND DRILLING DETAIL**

ECW#11-614  
 11.07.26

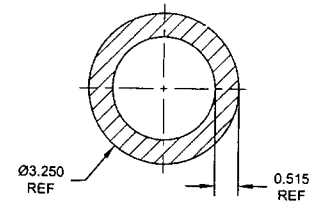
**UNDER REVIEW**  
11.06.23

**DEO ATTACHED**

**RELEASED**  
 2009-10-29



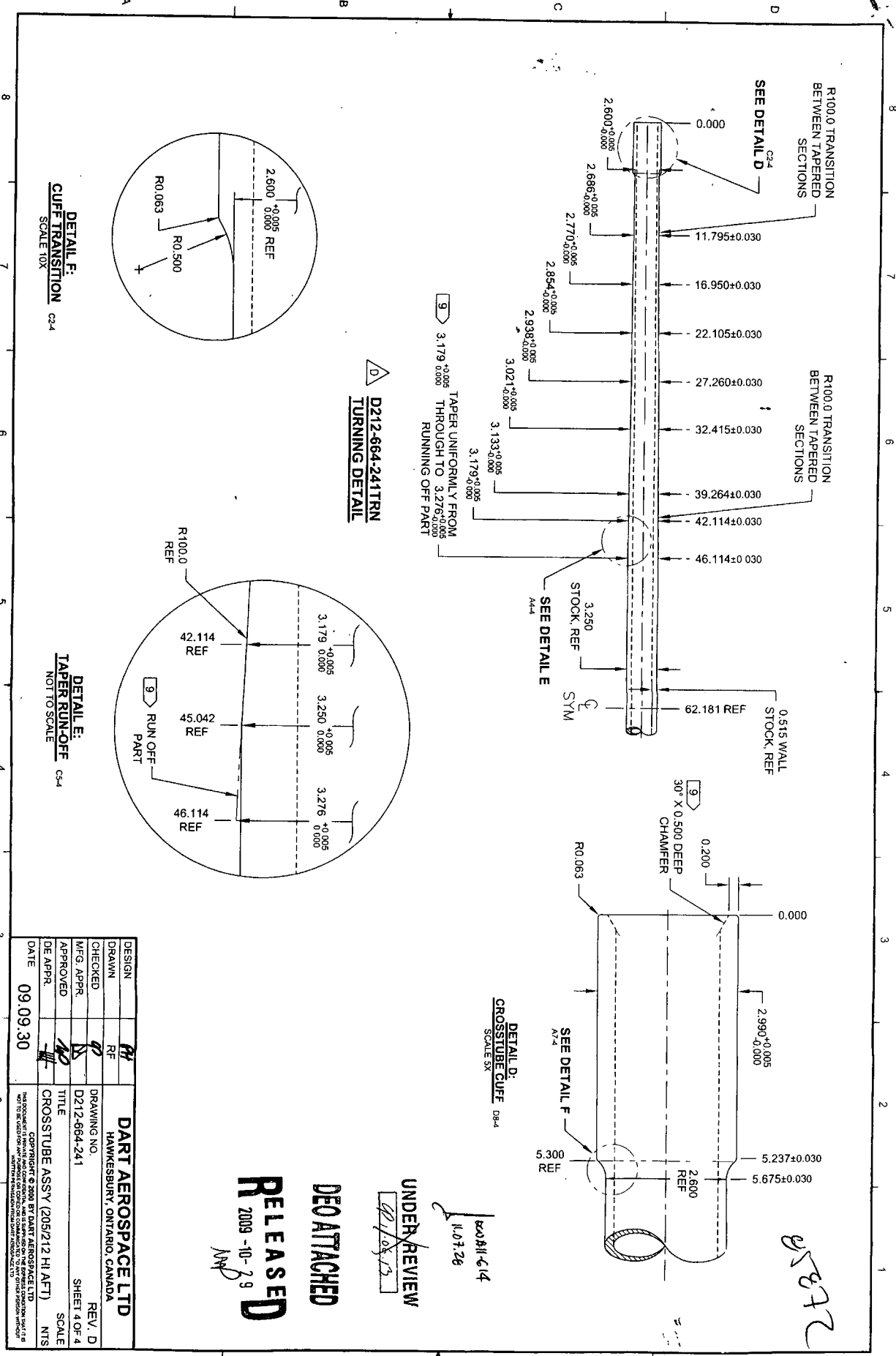
**VIEW C-C: CUFF DETAIL** D2-3  
 SCALE 3X



**SECTION B-B** D4-3  
 SCALE 4X

DESIGN	PH	<b>DART AEROSPACE LTD</b>	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	PS	DRAWING NO. D212-664-241	REV. D
MFG. APPR.	PS	SHEET 3 OF 4	
APPROVED	PS	TITLE	SCALE
DE APPR.	PS	CROSSTUBE ASS'Y (205/212 HI AFT)	NTS
DATE	09.09.30	COPYRIGHT © 2000 BY DART AEROSPACE LTD <small>THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.</small>	

8 7 6 5 4 3 2 1



DEATTACHED  
 RELEASED  
 2009-10-29

UNDER REVIEW  
 11.07.26

25872

85872

DRAWING NO. D212-664-241	TITLE CROSSTUBE ASSY (205/212 HI AFT)	REV. D	DART AEROSPACE LTD ENGINEERING ORDER		D.E.O. NO. D212-664-241-D-1	SHEET NO. SHEET 1 OF 2	SCALE NTS
DRAWN	CHECKED	MFG. APPR.	APPROVED	DE APPR.			
DATE 11.04.07	DATE 11.04.11	DATE 11.04.12	DATE 11/04/12	DATE 11.04.12			

**PURPOSE:**

ADD AN INSPECTION WINDOW TO UNDERSIDE OF CROSSTUBE.

**CHANGE:**

NOTES 2 OF SHEET 1 IS AMENDED AS FOLLOWS:

**IS:**

- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1  
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2  
MASK UNDERSIDE OF CROSSTUBE AS SHOWN (HATCHED AREA) AND  
PAINT OUTSIDE PER DART QSI 005 4.2  
REMOVE MASKING AND APPLY CLEAR COAT

**WAS:**

- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1  
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2  
PAINT OUTSIDE PER DART QSI 005 4.2

RELEASED  
2011-04-18

UNDER REVIEW

11.16.13

ECN#1-614

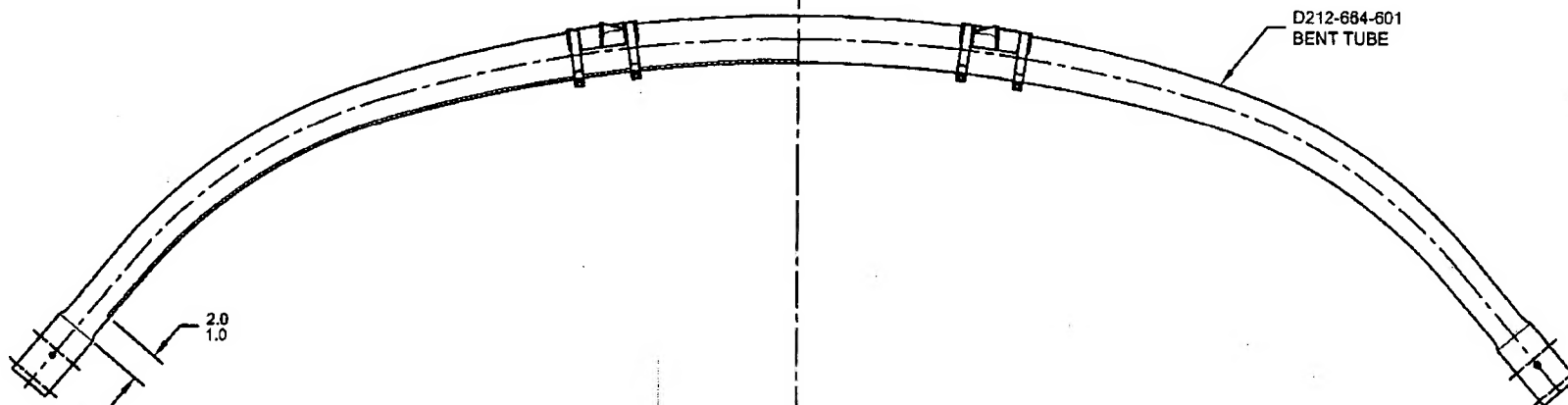
11.07.28

85872

DRAWING NO. D212-664-241	TITLE CROSSTUBE ASSY (205/212 HI AFT)	REV. D	DART AEROSPACE LTD ENGINEERING ORDER	D.E.O. NO. D212-664-241-D-1	SHEET NO. SHEET 2 OF 2	SCALE NTS
DRAWN	CHECKED	MFG. APPR.	APPROVED	DE APPR.		
DATE 11.04.07	DATE 11.04.11	DATE 11.04.12	DATE 11/04/12	DATE 11.04.12		

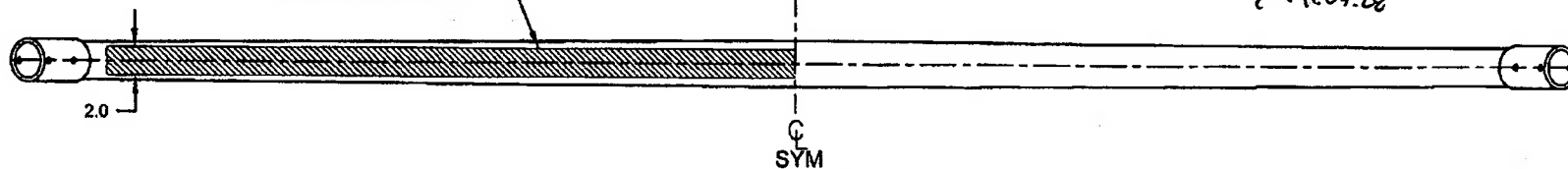
**IS:**

**WAS:**



**D212-664-241-241B  
ASSEMBLY DETAIL**

MASK AREA PRIOR TO PAINTING,  
REMOVE MASKING AFTER PAINT  
AND APPLY CLEAR COAT



**RELEASED**  
2011-04-18

**UNDER REVIEW**

11.06.13  
11.07.28

85872

DRAWING NO. D212-664-241	TITLE CROSSTUBE ASS'Y (205/212 HI AFT)	REV. D	<b>DART AEROSPACE LTD ENGINEERING ORDER</b>		D.E.O. NO. D212-664-241-D-2	SHEET NO. SHEET 1 OF 1	SCALE NTS
DRAWN 92	CHECKED ASS	MFG. APPR. 8	APPROVED MP		DE APPR. H		
DATE 11.07.15	DATE 11.07.20	DATE 11.07.21	DATE 11/07/21		DATE 11.07.21		

**PURPOSE:**

REPLACE MAGNOBOND WITH PROSEAL.

**CHANGE:**

IS:

Item	Qty -241	Qty -241B	Part Number	Description
7	A/R	A/R	PROSEAL 890 B-2	SEALANT, AMS-S-8802 CLASS B-2

WAS:

7	A/R	A/R	MAGNOBOND 6398	ROCKWELL SPECIFICATION RBO-120-023 ADHESIVE (TEXTRON/BELL SPEC. 299-947-100, TYPE II, CLASS 2 ADHESIVE)
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NOTE 12 & 15, SHEET 1 IS AMENDED AS FOLLOWS:

IS:

- 12) TO INSTALL D2940-1 SUPPORT: ABRASE MATING SURFACE OF SUPPORT AND CROSSTUBE WITH 180-GRIT SANDPAPER AND REMOVE RESIDUE WITH MEK (OR EQUIVALENT). APPLY A 0.04" TO 0.07" THICK LAYER OF PROSEAL 890 CLASS B-2 (OR AMS-S-8802 CLASS B-2) SEALANT TO MATING SURFACE OF SUPPORT.
- 15) TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS SHOWING IN SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING. **PRIOR TO PACKAGING, RE-CHECK TORQUE ON CLAMPS AFTER PROSEAL 890 SEALANT HAS CURED FOR 72 HOURS.**

WAS:

- 12) INSTALL D2940-1 SUPPORT USING 0.03" TO 0.06" THICK LAYER OF MAGNOBOND 6398 TO THE SURFACE OF D2940-1 THAT WILL BE IN CONTACT WITH THE CROSSTUBE PER QSI 015. LET CURE FOR 12 HOURS AFTER INSTALLATION AND PRIOR TO PACKAGING.
- 15) TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS SHOWING IN SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING.

RELEASED  
2011-07-28  
W

